L Number	Hits	Search Text	DB	Time stamp
1	192	balanced adj antenna	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 12:31
2	3	balanced adj antenna and balanced adj amplifier	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 12:32
3	255	balanced with antenna and balanced with amplifier	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 12:33
5	1	balanced with antenna and balanced with amplifier and ((mobile or cell or celluar or radio) adj (telephone or phone) or (radiotelephone)) and (PCB or (printed adj circuti adj board)) and (ground with plane)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 12:34
4	16	balanced with antenna and balanced with amplifier and ((mobile or cell or celluar or radio) adj (telephone or phone) or (radiotelephone))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 12:40
6	11	geeraert.in.	EPO; DERWENT	2003/08/24 12:36
7	3	balanced adj antenna and balanced with amplifier and ((mobile or cell or celluar or radio) adj (telephone or phone) or (radiotelephone))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 12:40
8	21	balanced adj antenna and balanced with amplifier	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 12:41
9	10	balanced adj antenna and balanced with amplifier and ground adj plane	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 12:59
10	14	balanced adj antenna and ground adj plane and (elements with opposite)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 13:57
17	8	455/13.3,19,75,63.4,82,83,562.1,575.5,575.7 and balanced adj antenna	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 13:03
18	134	343/700R.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 13:03
19	0	343/700R.ccls. and balanced adj antenna	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 13:04
20	16	343/700R,725,740,747,793,845,865.ccls. and balanced adj antenna	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 13:04
27	1	1997-201619.NRAN.	DERWENT	2003/08/24 13:19
30	2	("6242300").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 13:58
31	2	("6424300").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 14:15

32	271	antenna with perpendicular with (ground adj plane)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 14:16
33	3	balanced with antenna with perpendicular with (ground adj plane)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 14:17
34	86	antenna with perpendicular with (ground adj plane) and Mobile	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 14:19
35	31	antenna with perpendicular with (ground adj plane) and ((mobile or cell or celluar or radio) adj (telephone or phone) or (radiotelephone))	USPAT; EPO; JPO; DERWENT	2003/08/24 14:33
36	0	antenna with elelment with perpendicular with (ground adj plane) and ((mobile or cell or celluar or radio) adj (telephone or phone) or (radiotelephone))	USPAT; EPO; JPO; DERWENT	2003/08/24 14:33
37	0	antenna with elelment with perpendicular with (ground adj plane)	USPAT; EPO; JPO; DERWENT	2003/08/24 14:33
38	91	antenna with element with perpendicular with (ground adj plane)	USPAT; EPO; JPO; DERWENT	2003/08/24 14:34
39	18	antenna with element with perpendicular with (ground adj plane) and ((mobile or cell or celluar or radio) adj (telephone or phone) or (radiotelephone))	USPAT; EPO; JPO; DERWENT	2003/08/24 14:56
40	4134	dielectric adj constant with greater	USPAT; EPO; JPO; DERWENT	2003/08/24 14:56
41	4152	dielectric adj constant with greater (balanced adj antenna and balanced with amplifier)	USPAT; EPO; JPO; DERWENT	2003/08/24 14:56
42	5563674	dielectric adj constant with greater "8"	USPAT; EPO; JPO; DERWENT	2003/08/24 14:57
43	144	dielectric adj constant with greater with "8"	USPAT; EPO; JPO; DERWENT	2003/08/24 14:57
44	13	dielectric adj constant with greater with "8" and antenna	USPAT; EPO; JPO; DERWENT	2003/08/24 15:00
45	0	alumina with pcb with antenna	USPAT; EPO; JPO; DERWENT	2003/08/24 15:00
46	154	alumina with antenna	USPAT; EPO; JPO; DERWENT	2003/08/24 15:00
47	2	alumina with antenna and pcb	USPAT; EPO; JPO; DERWENT	2003/08/24 15:31
48	7	floating adj ground with antenna	USPAT; EPO; JPO; DERWENT	2003/08/24 16:25
49	2	antenna with overlap with tune	USPAT; EPO; JPO; DERWENT	2003/08/24 16:28
50	2231	antenna with tune	USPAT; EPO; JPO; DERWENT	2003/08/24 16:28
51	3	antenna with tune with overlap	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 16:29
52	2472	antenna with tune	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 16:29

53	1014	antenna with tune with frequency	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 16:29
54	11	antenna with tune with frequency same overlap	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 16:31
55	13	antenna with tune same overlap	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 16:32
56	200	antenna with tune with frequency with band	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 16:32
57	3	antenna with tune with frequency with band and balanced adj antenna	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 16:35
58	212	antenna with elements with overlap	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 16:36
59	2	antenna with elements with overlap same tune	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 16:39
60	1	1997-480479.NRAN.	DERWENT	2003/08/24 16:36
61	2	("5838282").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 16:37
62	15	antenna with elements with overlap and tune	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 16:42
63	17	antenna with elements with overlap and ((mobile or cell or celluar or radio) adj (telephone or phone) or (radiotelephone))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 16:43
64	2	antenna with elements with overlap and ((mobile or cell or celluar or radio) adj (telephone or phone) or (radiotelephone)) and tune	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 16:44
65	15	antenna with elements with overlap and ((mobile or cell or celluar or radio) adj (telephone or phone) or (radiotelephone)) and frequency	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/24 16:45

dielectric material

A dielectric material is a substance that is a poor conductor of electricity, but an efficient supporter of electrostatic fields. If the flow of current between opposite electric charge poles is kept to a minimum while the electrostatic lines of flux are not impeded or interrupted, an electrostatic field can store energy. This property is useful in capacitors, especially at radio frequencies. Dielectric materials are also used in the construction of radio-frequency transmission lines.

In practice, most dielectric materials are solid. Examples include porcelain (ceramic), mica, glass, plastics, and the oxides of various metals. Some liquids and gases can serve as good dielectric materials. Dry air is an excellent dielectric, and is used in variable capacitors and some types of transmission lines. Distilled water is a fair dielectric. A vacuum is an exceptionally efficient dielectric.

An important property of a dielectric is its ability to support an electrostatic field while dissipating minimal energy in the form of heat. The lower the *dielectric loss* (the proportion as heat), the more effective is a dielectric material. Another consideration is the *dielectric constant*, the extent to w substance concentrates the electrostatic lines of flux. Substances with a low dielectric constant include a perfect v and most pure, dry gases such as helium and nitrogen. Materials with moderate dielectric constants include ceram water, paper, mica, polyethylene, and glass. Metal oxides, in general, have high dielectric constants.

The prime asset of high-dielectric-constant substances, such as aluminum oxide, is the fact that they make possib manufacture of high-value capacitors with small physical volume. But these materials are generally not able to wit electrostatic fields as intense as low-dielectric-constant substances such as air. If the voltage across a dielectric m becomes too great – that is, if the electrostatic field becomes too intense – the material will suddenly begin to con This phenomenon is called *dielectric breakdown*. In components that use gases or liquids as the dielectric medium

reverses itself if the voltage decreases below the critical point. But in components containing solid dielectrics, diele breakdown usually results in permanent damage.

Last updated on: Sep 28, 2001

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